

PATENT COOPERATION TREATY

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From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

WRITTEN OPINION
(PCT Rule 66)

To:

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Tokyo 162-0825
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Date of mailing
(day/month/year)

08.10.2004

Applicant's or agent's file reference
F910

REPLY DUE

within 2 month(s)
from the above date of mailing

International application No.
PCT/JP 03/09170

International filing date (day/month/year)
18.07.2003

Priority date (day/month/year)
13.11.2002

International Patent Classification (IPC) or both national classification and IPC
H02K3/47

Applicant
HONDA GIKEN KOGYO KABUSHIKI KAISHA et al.

1. This written opinion is the **third** drawn up by this International Preliminary Examining Authority.
2. This opinion contains indications relating to the following items:
 - I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application
3. The applicant is hereby **invited to reply** to this opinion.

When? See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d).

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also: For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 bis.
For an informal communication with the examiner, see Rule 66.6.

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.
4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 13.03.2005

Name and mailing address of the international preliminary examining authority:



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I. Basis of the opinion

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed"*):

Description, Pages

1-17 as originally filed

Claims, Numbers

1-9 received on 21.01.2004 with letter of 15.01.2004

Drawings, Sheets

1/17-17/17 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☒ the claims, Nos.: 2,4
- ☐ the drawings, sheets:

5. ☐ This opinion has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

6. Additional observations, if necessary:

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	1,3
Inventive step (IS)	Claims	5, 6-9
Industrial applicability (IA)	Claims	

2. Citations and explanations**see separate sheet**

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

The amendments of the claims filed with the letter of 15.01.2004 seemed to be lost or overlooked for the written opinion of the 24.08.2004 and the examining division apologise this.

- 1) Reference is made to the following documents:

D1: EP-A-1 073 179 (HONDA MOTOR CO LTD) 31 January 2001 (2001-01-31)

D2: FR-A-2 411 788 (VIDEON SA) 13 July 1979 (1979-07-13)

- 2.1) The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.

Document D1 discloses (the references in parentheses applying to this document):
A slotless permanent magnet electric machine, comprising a cylindrical rotor (7) having a permanent magnet (11), a stator (1) surrounding the rotor (7) wherein the stator (1) consists of a slotless winding (15) inside an iron core (17) and an air gap, the stator winding (15) comprises a winding made out of a plurality of overlapping turns of a conductor (23, 29) which are shifted in circumferential direction and the conductor (23, 29) has an rectangular cross section with rounded corners, including a long an a short side, with the long side extending in radial direction (cf. figures 5-6).

- 2.2) The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of independent claim 5 does not involve an inventive step in the sense of Article 33(3) PCT.

Document D2 is regarded as being the closest prior art to the subject-matter of claim 5, and discloses (the references in parentheses applying to this document):
A method of making a winding including steps of:
- wrapping a first round wire (3) having a diameter of the short side of the conductor and a second round wire in a spiral around a tool, whereby alternating the first and the second wire and having a contact between the two wires (cf. figure 1),

- removing the first wire from the tool,
- wrapping the conductor around the bar inside the space created by removing the first wire,
- removing the second wire from the tool.

The subject-matter of claim 5 therefore differs from this known document D2 in the assembly of a winding for a slotless permanent magnet electric machine, whereby the winding conductors have a rectangular cross-section, being wound with the conductor long side perpendicularly towards the surface of the tool, and a bar as winding tool.

The problem to be solved by the present invention may therefore be regarded as how to create a slotless winding.

The solution proposed in claim 5 of the present application cannot be considered as involving an inventive step (Article 33(3) PCT) for document D1 discloses a slotless permanent magnet electric machine, comprising a rectangular conductor with the long side perpendicular to a winding tool. A skilled person would use the winding tool and method as disclosed in document D2 to produce an electric machine disclosed in document D1.

- 3) Dependent claims 3, 6-9 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step, see documents D1 and D2 or general knowledge of a skilled person.
- 4) Some of the features in the method claims 6 and 7 relate to an apparatus rather than adding steps to the method of claim 5. The intended limitations are therefore not clear from this claim, contrary to the requirements of Article 6 PCT. A dependency of claims 6 and 7 on apparatus claim 1, would overcome this objection.

The term "elongated" used in claim 1 is vague and unclear and leaves the reader in doubt as to the meaning of the technical feature to which it refers, thereby rendering the definition of the subject-matter of said claim unclear, Article 6 PCT. The definition in claim 5 of a conductor to only having a rectangular cross-section including a long and a short side seems to be more appropriate.

If there are several claims, they shall be numbered consecutively (Rule 6.1 b), PCT). In case of amendments having cancelled claims, the remaining claims could be renumbered.

- 5) Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the documents D1 and D2 is not mentioned in the description, nor are these documents identified therein.

The description is not in conformity with the claims as required by Rule 5.1(a)(iii) PCT.

The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

The applicant is requested to file new claims which take account of the above comments.